P-204[ANIMAL PHYSIOLOGY AND ENDOCRINOLOGY]

1. Answer the following questions. [1 mark]

1. Which part of human brain is concerned with the regulation of body temperature and urge for eating are contained in ?
a) cerebellum
b) cerebrum
c) medulla oblongata
d) hypothalamus

2. Cornea transplant in humans is almost never rejected. This is because
a) it is composed of enucleated cells.
b) it is a non living layer.
c) it has no blood supply.
d) its cells are least penetrable by bacteria.

3. Which one of the following is the correct difference between rod cells and cone cells of our retina?

	Characteristics	Rod cells	Cone cells
a)	Overall functions	Vision in poor light	Colour vision and detailed vision in bright light.
b)	Distribution	More concentrated in the centre of retina.	Evenly distributed all over retina
c)	Visual acuity	high	low
d)	Visual pigment contained	Iodopsion	Rhodopsin

4. During the propagate ion of a nerve impulse, the action potential results from the movement of
a) K^+ions from intracellular fluid to extracellular fluid
b) K^+ions from extracellular fluid to intracellular fluid
c) Na^+ions from extracellular fluid to intracellular fluid
d Na^+ions from intracellular fluid to extracellular fluid

5. Alzhemer's disease in humans is associated with the deficiency of
a) dopamine
b) glutamic acid
c) acetylcholine
d) gamma aminobutyric acid

6. Sympathetic nervous system induces
a) Heart beat
b) Secretion of saliva
c) Secretion of digestive juices

d) all of these

7. Which of the following is the example of the action of the autonomous nervous system?
a) Swallowing of food
b) papillary reflex
c) knee jerk response
d) peristalsis of the intestine

8. In the resting state of the neural membrane, diffusion due to concentration gradient, if allowed would drive
a) K^+ into the cell
b) K^+ and Na^+ out of the cell
c) Na^+ into the cell
d) Na^+ out of the cell

9. Depolarization of axolema during nerve conduction takes place because of
a) equal amount of Na+ and K+ move out across axolema
b) Na^+ move inside and K^+move more outside.
c) more Na^+ outside
d) none of the above

10. Select the answer with correct matching of the structure, its source and function

	Structure	**Location**	**Function**
a)	Eustachian	Anterior part of internal ear	Equalizes air pressure on either sides of tympanic membrane
b)	Cerebellum	Mid brain	Controls respiration and gastric secretions
c)	Hypothalamus	forebrain	Controls body temperature, urge for eating and drinking.
d)	blindspot	Near the place where optic nerve leaves the eye.	Rods and cones are present but inactive here.

Answers:
1. d) hypothalamus
2. c) it has no blood supply
3.a) Overall functions - Vision in poor light - Colour vision and detailed vision in bright light.
4. c) Na^+ions from extracellular fluid to intracellular fluid
5. c) acetylcholine
6. a) Heart beat
7. d) peristalsis of the intestine
8. c) Na^+ into the cell

9. a) equal amount of Na+ and K+ move out across axolema
10. c) Hypothalamus – forebrain - Controls body temperature, urge for eating and drinking

2.Answer the following questions within 2-3 sentences. [1.5 mark]

1. What is blood brain barrier ?
2. What re the components of neuron ?
3. What do you mean by nerve conduction ?
4. What is synapse ?
5. State different types of muscles with their properties .
6. What is glomerulus ?
7. State CO_2 transport in blood.
8. State Hemostasis.
9. What is cardiac cycle ?
10. State ECG .
11. Define podocytes.
12. What do you mean by thermo-regulation.
13. Define osmoregulation.
14. Mention types of Receptors.
15. What is signal transduction pathway ?
16. What is GPCR ?
17. What do you mean by secondary messengers ?
18. State signalling of peptide hormone.
19. State acid-base balance.
20. State ABO blood group system.
21. Draw a labelled diagram of neuron.
22. Mention structure of Hypothalamus.
23. Mention structure of Pituitary gland.
24. Mention structure of Thyroid gland.
25. Mention structure of Adrenal gland.
26. State characteristics of receptors.

3. Answer the following questions within 75-100 words. [2 marks]

1. Define central nervous system.
2. What do you mean by synaptic transmission.
3. What do you mean by ultrafiltration.
4. Define cardiac muscle.
5. Mention regulation of respiration.
6. What do you mean by hormonal control ?
7. State physiology of digestion of carbohydrate.
8. State transport of oxygen.
9. Mention components of blood.
10. What is acid –base balance ?
11. State signalling of steroid hormone.
12. Mention regulation of signalling pathway.
13. Mention characteristics of receptors.

14. Give the pathway of signal transduction.
15. State about electrolyte balance.
16. Give the function of hypothalamus.
17. Give the function of pituitary gland.
18. Give the function of thyroid gland.
19. Give the function of adrenal gland.
20. What is blood volume ?

4. Answer the following questions within 500 words. [6marks]

1. Give an account on neuroanatomy of brain and spinal cord.
2. Give the organization of central and peripheral nervous system.
3. Give an account on blood brain barrier.
4. Write a short note on neuron.
5. Give an account on nerve conduction and synaptic transmission.
6. State about the structure of muscle. Give the molecular mechanism of muscle contraction.
7. Give the physiology of digestion of carbohydrates , protein and fat.
8. Write about oxygen and carobondioxide transport and regulation of respiration.
9. Give the mechanism of urine formation.
10. Write short note on regulation of water balance.
11. State about blood volume , blood pressure .
12. Write short note on electrolyte balance and acid-base balance.
13. State about blood and its composition.
14. What is ABO and Rh system.
15. Describe about haemostasis.
16. Give an account on cardiac cycle and its regulation.
17. What is ECG ?
18. Give the structure and function of hypothalamus.
19. Give the structure and function of pituitary gland.
20. Give the structure and function of thyroid gland.
21. Give the structure and function of adrenal gland.
22. State about hormonal control of carbohydrates, calcium and phosphorous metabolism.
23. What do you understand by thermoregulation?
24. Write short note on osmoregulation and hormonal regulation of excretion.